Appendix A:

Identification of Interfering Claims

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141. A method of simultaneously conducting multiple chemical reactions in a reaction assembly that comprises a microtiter plate of wells containing test samples and an array of sets of chemical reactants comprising the steps of: assembling the array of sets of chemical reactants to the microtiter plate of test samples such that the array covers open ends in the test sample wells of the microtiter plate to form a plurality of closed cells, each closed cell comprising a set of chemical reactants and a respective test sample; sealing the microtiter plate to the array to create one or more of a gas tight, a liquid tight, and a fluid tight seal; and mechanically agitating the sealed reaction assembly to contact the test samples with the chemical reactants in each closed cell simultaneously.	1. A method of simultaneously conducting multiple chemical reactions in a reaction assembly that comprises a microtiter plate of wells containing test samples and an array of sets of chemical reactants comprising the steps of: assembling the array of sets of chemical reactants to the microtiter plate of test samples such that the array covers open ends in the test sample wells of the microtiter plate to form a plurality of closed cells, each closed cell comprising a set of chemical reactants and a respective test sample; sealing the microtiter plate to the array to create one or more of a gas tight, a liquid tight, and a fluid tight seal; and mechanically agitating the sealed reaction assembly to contact the test samples with the chemical reactants in each closed cell simultaneously.

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142. The method of claim 141, wherein in the step of assembling, the array is made of a flexible material, and wherein in the step of sealing, the array is placed against the microtiter plate using one or more of mechanical clamps, radiation, heat, vacuum and an adhesive to seal the reaction assembly.	7. The method of claim 1, wherein in the step of assembling, the array is made of a flexible material, and wherein in the step of sealing, the array is placed against the microtiter plate using one or more of mechanical clamps, radiation, heat, external fluid pressure, vacuum and an adhesive to seal the reaction assembly.
143. The method of claim 141, wherein in the step of assembling, the array is made of an optically transparent flexible film having an adhesive surface that surrounds the sets of chemical reactants, the adhesive surface being contacted with the microtiter plate.	8. The method of claim 1, wherein in the step of assembling, the array is made of an optically transparent flexible film having an adhesive surface that surrounds the sets of chemical reactants, the adhesive surface being contacted with the microtiter plate.
144. The method of claim 141, wherein in the step of assembling, the array is made of a flexible material having an adhesive on a surface that comprises the sets of chemical reactants, and the adhesive surface is contacted with the microtiter plate, and wherein the step	9. The method of claim 1, wherein in the step of assembling, the array is made of a flexible material having an adhesive on a surface that comprises the sets of chemical reactants, and the adhesive surface is contacted with the microtiter plate, and wherein the step

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of sealing comprises applying one or more of mechanical clamps, radiation, heat and vacuum to the reaction assembly for a period of time until the adhesive adheres the array to the plate.	of sealing comprises applying one or more of mechanical clamps, radiation, heat, external fluid pressure, and vacuum to the reaction assembly for a period of time until the adhesive adheres the array to the plate.
145. The method of claim 144, wherein the adhesive is selected from an ultraviolet (UV) light curable adhesive that has increased adhesion with the application of UV light to the adhesive and a releasable adhesive.	10. The method of claim 9, wherein the adhesive is selected from an ultraviolet (UV) light curable adhesive that has increased adhesion with the application of UV light to the adhesive, and a releasable adhesive that has reduced adhesion with the application of one or more of heat, cold and radiation to the adhesive.
146. The method of claim 141, wherein the test sample wells are spatially arranged in a surface of the microtiter plate, each well having a side wall adjacent to a closed end that together enclose the well except for an open end at the surface of the microtiter plate, and wherein the array comprises an array substrate	11. The method of claim 1, wherein the test sample wells are spatially arranged in a surface of the microtiter plate, each well having a side wall adjacent to a closed end that together enclose the well except for an open end at the surface of the microtiter plate, and wherein the ray comprises an array substrate

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having the sets of chemical reactants bound to an ray [sic array] surface of the array substrate in an array pattern of features, the array pattern being similar to the spatial arrangement of test sample wells on the microtiter plate.	having the sets of chemical reactants bound to an ray surface of the array substrate in an array pattern of features, the array pattern being similar to the spatial arrangement of test sample wells on the microtiter plate.
147. The method of claim 141, wherein in the step of mechanically agitating a difference in mass densities between the test sample and gas filling any space between the test sample and the set of chemical reactants in each closed cell causes mixing of the test sample with the chemical reactants in each closed cell.	12. The method of claim 1, wherein in the step of mechanically agitating a difference in mass densities between the test sample and gas filling any space between the test sample and the set of chemical reactants in each closed cell causes mixing of the test sample with the chemical reactants in each closed cell.
148. The method of claim 141, further comprising the step of analyzing reaction products in the closed cells after the step of mechanically agitating.	13. The method of claim 1, further comprising the step of analyzing reaction products in the closed cells after the step of mechanically agitating.
149. The method of claim 148, wherein the array is optically transparent.	14. The method of claim 13, wherein one or both of the microtiter plate and the array is optically transparent.
150. The method of claim 141, wherein the	16. The method of claim 1, wherein the

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microtiter plate is a 96 well microtiter plate and the number of sets of chemical reactants on the array match the selected microtiter plate.	microtiter plate is selected from a 96, 234, 384, and 1536 well microtiter plate and the number of sets of chemical reactants on the array match the selected microtiter plate.
151. The method of claim 141, wherein each set of chemical reactants is an array feature that comprises a subarray having the chemical reactants arranged in a subarray pattern of subfeatures, and wherein the chemical reactant is different in at least one feature or in at least one subfeature on the array.	17. The method of claim 1, wherein each set of chemical reactants is an array feature that comprises a subarray having the chemical reactants arranged in a subarray pattern of subfeatures, and wherein the chemical reactant is different in at least one feature or in at least one subfeature on the array.
152. The method of claim 141, wherein the test sample is different in at least one well of the microtiter plate.	18. The method of claim 1, wherein the test sample is different in at least one well of the microtiter plate.
153. A method of simultaneously conducting multiple chemical reactions between a first chemical sample and a second chemical sample comprising the steps of: providing a plate having a plurality of wells spatially arranged in a surface of the plate in a well array pattern,	19. A method of simultaneously conducting multiple chemical reactions between a first chemical sample and a second chemical sample comprising the steps of: providing a plate having a plurality of wells spatially arranged in a surface of the plate in a well array pattern,

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each well having a side wall adjacent to a closed end that enclose the well except for an open end that is opposite the closed end and that is adjacent to the plate surface, the plurality of wells for receiving the first chemical sample via the open end; providing an array of the second chemical sample, the array comprising sets of the second chemical sample bound to and spatially arranged on a surface of an array substrate in an array pattern of features, the well array pattern being spatially similar to the feature array pattern; assembling the array onto the plate to form a sealed reaction assembly, such that the surface of the array faces the surface of the plate and encloses the open ends of the plurality of wells to form closed cells, each closed cell comprising the first chemical sample and a respective set of the second chemical sample features, whercin the sealed reaction assembly is one or more of gas tight, liquid tight, and fluid tight; and	each well having a side wall adjacent to a closed end that enclose the well except for an open end that is opposite the closed end and that is adjacent to the plate surface, the plurality of wells for receiving the first chemical sample via the open end; providing an array of the second chemical sample, the ray comprising sets of the second chemical sample bound to and spatially arranged on a surface of an array substrate in an array pattern of features, the well array pattern being spatially similar to the feature array pattern; assembling the array onto the plate to form a sealed reaction assembly, such that the surface of the array faces the surface of the plate and encloses the open ends of the plurality of wells to form closed cells, each closed cell comprising the first chemical sample and a respective set of the second chemical sample features, wherein the sealed reaction assembly is one or more of gas tight, liquid tight, and fluid tight; and

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contacting the first chemical sample with the second chemical sample in each closed cell of the sealed reaction assembly.	contacting the first chemical sample with the second chemical sample in each closed cell of the sealed reaction assembly.
154. The method of claim 153, wherein the array substrate is made of a flexible material, and wherein in the step of assembling, the array substrate is contacted with the plate using one or more of mechanical clamps, radiation, heat, vacuum and an adhesive to seal the reaction assembly.	20. The method of claim 19, wherein the array substrate is made of a flexible material, and wherein in the step of assembling, the array substrate is contacted with the plate using one or more of mechanical clamps, radiation, heat, external fluid pressure, vacuum and an adhesive to seal the reaction assembly.
155. The method of claim 153, wherein the array substrate is made of an optically transparent flexible film having an adhesive on the surface to which the second chemical samples are bound, the adhesive surrounding the features, and wherein in the step of assembling, the adhesive is contacted with the plate surface to seal the reaction assembly.	21. The method of claim 19, wherein the array substrate is made of an optically transparent flexible film having an adhesive on the surface to which the second chemical samples are bound, the adhesive surrounding the features, and wherein in the step of assembling, the adhesive is contacted with the plate surface to seal the reaction assembly.
156. The method of claim 154, wherein the flexible array substrate further comprises the	22. The method of claim 20, wherein the flexible array substrate further comprises the

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adhesive on the surface to which the second chemical samples are bound, and wherein in the step of assembling, the adhesive surface of the array is contacted with the plate surface, and the reaction assembly is sealed using one or more of heat, radiation, and pressure.	adhesive on the surface to which the second chemical samples are bound, and wherein in the step of assembling, the adhesive surface of the array is contacted with the plate surface, and the reaction assembly is sealed using one or more of heat, radiation, and pressure.
157. The method of claim 156, wherein the adhesive is selected from a releasable adhesive and an ultraviolet light (UV) curable adhesive, such that adhesion is increased with the application of UV light to the adhesive.	23. The method of claim 22, wherein the adhesive is selected from a releasable adhesive, such that adhesion is reduced with the application of heat, cold or radiation to the adhesive, and an ultraviolet light (UV) curable adhesive, such that adhesion is increased with the application of UV light to the adhesive.
158. The method of claim 153, wherein the step of contacting comprises one or more of mechanically agitating the reaction assembly, controlling the reaction temperature of the reaction assembly, directing radiation into the assembly, and inverting the reaction assembly	30. The method of claim 19, wherein the step of contacting comprises one or more of mechanically agitating the reaction assembly, controlling the reaction temperature of the reaction assembly, directing radiation into the assembly, and inverting the reaction assembly

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to cause mixing between the first chemical sample and the second chemical sample.	to cause mixing between the first chemical sample and the second chemical sample.
159. An apparatus for simultaneously conducting multiple chemical reactions comprising: a plate having a plurality of wells spatially arranged in a surface of the plate in a well array pattern, each well having a side wall adjacent to a closed end that enclose the well except for an open end that is opposite the closed end and that is adjacent to the plate surface, the plurality of wells for receiving a test sample via the open end; an array of sets of chemical reactants, the sets of chemical reactants being bound to and spatially arranged on a surface of an array substrate in an array pattern of features, the well array pattern being spatially similar to the feature array pattern, wherein the array surface faces the plate surfacc and covers the open ends of the wells to form closed cells, each closed cell comprising a	37. An apparatus for simultaneously conducting multiple chemical reactions comprising: a plate having a plurality of wells spatially arranged in a surface of the plate in a well array pattern, each well having a side wall adjacent to a closed end that enclose the well except for an open end that is opposite the closed end and that is adjacent to the plate surface, the plurality of wells for receiving a test sample via the open end; an array of sets of chemical reactants, the sets of chemical reactants being bound to and spatially arranged on a surface of an array substrate in an array pattern of features, the well array pattern being spatially similar to the feature array pattern, wherein the array surface faces the plate surface and covers the open ends of the wells to form closed cells, each closed cell comprising a

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respective test sample and a respective set of the chemical reactants; and a seal between the plate and the array that is one or more of gas tight, liquid tight, and fluid tight.	respective test sample and a respective set of the chemical reactants; and a seal between the plate and the array that is one or more of gas tight, liquid tight, and fluid tight.
160. The apparatus of claim 159, wherein the seal comprises the array substrate being made of a flexible material and one or more of mechanical clamps, radiation, heat, vacuum and an adhesive.	42. The apparatus of claim 37, wherein the seal comprises the array substrate being made of a flexible material and one or more of mechanical clamps, radiation, heat, external fluid pressure, vacuum and an adhesive.
161. The apparatus of claim 159, wherein the seal comprises the array substrate being made of an optically transparent flexible film having an adhesive that surrounds the features on the array surface, the adhesive being contacted with the plate surface.	43. The apparatus of claim 37, wherein the seal comprises the array substrate being made of an optically transparent flexible film having an adhesive that surrounds the features on the array surface, the adhesive being contacted with the plate surface.
162. The apparatus of claim 159, wherein the seal comprises using an adhesive selected from a releasable adhesive	44. The apparatus of claim 37, wherein the seal comprises using an adhesive selected from a releasable adhesive, such that adhesion is reduced with the application of heat, cold or radiation to the adhesive,

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and an ultraviolet light curable adhesive, such that adhesion is increased with the application of ultraviolet light to the adhesive.	and an ultraviolet light curable adhesive, such that adhesion is increased wit the application of ultraviolet light to the adhesive.
163. A kit for simultaneously conducting multiple different assays of biological materials comprising: an array having a plurality of sets of chemical reactants spatially arranged on an array substrate; and a plate having a plurality of spatially arranged wells in the plate, the wells being closed at one end and open at an opposite end for receiving a sample under test, wherein the array and the plate form a multiple closed cell reaction assembly when the array is assembled to the plate, such that the array covers the open ends of the wells to form closed cells, each closed cell comprising the test sample and a respective set of the chemical reactants, the reaction assembly comprising a seal between the plate and the array that is one or more of gas tight, liquid tight, and fluid tight	47. A kit for simultaneously conducting multiple different assays of biological materials comprising: an array having a plurality of sets of chemical reactants spatially arranged on an may substrate; and a plate having a plurality of spatially arranged wells in the plate, the wells being closed at one end and open at an opposite end for receiving a sample under test, wherein the array and the plate form a multiple closed cell reaction assembly when the array is assembled to the plate, such that the array covers the open ends of the wells to form closed cells, each closed cell comprising the test sample and a respective set of the chemical reactants, the reaction assembly comprising a seal between the plate and the array that is one or more of gas tight, liquid tight, and fluid tight

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when assembled.	when assembled.